PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P35723-P0	FOR FURTHER ACTION	See Form PCT/IPEA/416

International application No. PCT/JP2004/019488	International filing date *(day/month/year)* 20.12.2004	Priority date *(day/month/year)* 16.01.2004

International Patent Classification (IPC) or national classification and IPC
INV. G11B20/00 G06F1/00 H04L9/32

Applicant
MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 8 sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

   a. ☒ *sent to the applicant and to the International Bureau)* a total of 7 sheets, as follows:

      ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

      ☒ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

   b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

   ☒ Box No. I   Basis of the report

   ☐ Box No. II   Priority

   ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

   ☐ Box No. IV   Lack of unity of invention

   ☒ Box No. V   Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

   ☐ Box No. VI   Certain documents cited

   ☒ Box No. VII Certain defects in the international application

   ☒ Box No. VIII Certain observations on the international application

Date of submission of the demand 30.05.2005	Date of completion of this report 24.04.2006
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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

Box No. I   Basis of the report

1. With regard to the **language**, this report is based on

   ☒ the international application in the language in which it was filed

   ☐ a translation of the international application into , which is the language
   of a translation furnished for the purposes of:
   - ☐ international search (under Rules 12.3(a) and 23.1(b))
   - ☐ publication of the international application (under Rule 12.4(a))
   - ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))

2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

   Description, Pages

   1-20   as originally filed

   Claims, Numbers

   1-14   as amended (together with any statement) under Art. 19 PCT

   Drawings, Sheets

   1/10-10/10   as originally filed

   ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

4. ☒ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
   - ☐ the description, pages
   - ☒ the claims, Nos. 1-14
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

   * *If item 4 applies, some or all of these sheets may be marked "superseded."*

Box No. V   Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	3
	No:	Claims	1,2,4-9
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-9
Industrial applicability (IA)	Yes:	Claims	1-9
	No:	Claims	

2. Citations and explanations (Rule 70.7):

   see separate sheet

Box No. VII   Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII   Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item I
Basis of the report

The amendments filed after the International Search Report, i.e. claims 1-14 dated of May 25, 2005 go beyond the disclosure of the international application as filed. The report is therefore established as if these amendments have not been made.

The reasons are: no basis could be found in the application as originally filed for the amended claims 1-14:
- e.g. for replacing "authentication server" in claim 1 by the expression "server" which is the general expression for all types of servers, like e.g. document server, content server, banking server, and not exclusively an authentication server;
- e.g. for replacing "authentication data generated based on a terminal key" in claim 1 by "unique information", which has a more general meaning.

Thus, the reasoned statement with regard to novelty, inventive step or industrial applicability is based on claims 1-9 as originally filed.

Re Item V
Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. The following documents are referred to in the communication:

    D1: US-A-5 949 877 (TRAW ET AL) 7 September 1999 (1999-09-07)
    D2: WO 03/096339 A (MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD) 20 November 2003 (2003-11-20)

2. Claim 6 lacks novelty (Article 33(2) PCT).

    Document D1, which is considered to represent the most relevant state of the art for claim 6, discloses according to the subject-matter of claim 6, insofar the subject-matter is clear:

    an unauthorized terminal detection method for detecting an unauthorized terminal in terminals that accessed the authentication server via a network, comprising:

- receiving, from the terminal, authentication data generated based on a terminal key that is previously given to the terminal and a terminal ID that is identification information assigned to said each manufactured terminal (column 6, lines 31-36 in combination with column 7, lines 7-10);
- verifying authenticity of the terminal key using the received authentication data (column 7, lines 15-18);
- trying to search the received terminal ID based on the held predetermined terminal information concerning a plurality of terminal (column 7, lines 28-32); and
- determining that a terminal is an unauthorized terminal in the case where the authenticity of the terminal key is verified in the verifying, but a terminal ID different from the received terminal ID is detected (column 7, lines 28-32).

3. Document D2 is also very pertinent with regard to the subject-matter of claim 6, since in D2 a problem similar to that of the present application is solved by checking terminal ID and driver ID, i.e. detecting an unauthorized terminal by checking the terminal key and the terminal ID.

4. The above finding also applies to independent claims 1 and 8, which correspond to independent claim 6. Therefore, claims 1 and 8 lack novelty (article 33(2) PCT).

5. The subject-matter of claim 5 comprises the features of claim 1, i.e. the authentication server and comprises a terminal wherein the terminal includes
   - a terminal information sending unit operable to send, to the authentication server, authentication data generated based on a terminal key that is previously given to the terminal and a terminal ID that is identification information assigned to said each manufactured terminal (column 7, lines 7-12).

   Since the additional features are also disclosed in D1, claim 5 also lacks novelty (Article 33(2) PCT).

6. If novelty were disputable based on minor differences of interpretation it is pointed out that the subject-matter of independent claims 1, 5, 6, and 8 does not involve an inventive step.

7. The additional features of the dependent claims 2-4, 7, and 9 do not add anything

new or inventive to the independent claims because these features are either known from the above-mentioned prior art D1 (e.g. the terminal key is a public certificate in public key encryption method; receiving a terminal ID from an operator) or are common measures (e.g. judges that the terminal is an unauthorized terminal in the case where the digital content that is accessed exceeding the access limit).

Re Item VII
Certain defects in the international application

1. The features of the claims are not provided with reference signs place in parentheses (Rule 6.2(b) PCT).

2. Independent claims 1, 5, 6, and 8 are not in the two-part form in accordance with Rule 6.3(b) PCT, with those features known in combination from the prior art document D1 being placed in the preamble (Rule 6.3(b)(i) PCT) and with the remaining features being included in the characterising part (Rule 6.3(b)(ii) PCT).

3. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in documents D1 and D2 is not mentioned in the description, nor are these documents identified therein.

4. The phrase "which is incorporated herein by reference in its entirety" on page 5, line 32 - page 6, line 1 should have been deleted as the application should be self-contained; such referenced documents are not regarded as part of the disclosure unless they contain matter essential to the invention, in which case the subject-matter in question would have to incorporated into the description. This is however not the case here (see Guidelines 4.26).

5. The JP applications cited on page 1, lines 29-30 and on page 5, line 31 should in principle have been identified by their publication number and date; however, it seems that this document is not yet published at the time of establishing this report.

6. The vague and imprecise statements
   - "... and the like" in the description on page 3, line 8;

- "... that many modifications are possible in the exemplary embodiment without materially departing form the novel teachings and advantages of this invention. accordingly, all such modifications are intended to be included within the scope of the invention" in the description on page 20, lines 18-24 imply that the subject-matter for which protection is sought may be different to that defined by the claims, thereby resulting in lack of clarity of the claims when used to interpret them (see the Guidelines 5.30).

Re Item VIII
Certain observations on the international application

1. The claims do not meet the requirements of Article 6 PCT:

1.1 Apparatus claims 1, 2, 3, 5, and 8 comprise method steps (e.g. detects, verifies, registers, judges) and are therefore not clear concerning the category.

1.2 an antecedent definition for the expressions
- "the digital content" used in claim 3 (page 22, line 7);
- "the access limit" used in claim 3 (page 22, line 18);
is missing.

1.3 It is unclear if with the expressions
- "an unauthorized terminal" used twice in each of claims 1 (page 21, lines 1-2 and line 19), 5 (page 22, line 28 and page 23, line 17), 6 (page 23, lines 22-23 and page 24, line 2), and 8 (page 24, lines 16-17 and line 29);
- "terminals" and "a plurality of terminal" in each of claim 1 (page 22, line 4 and lines 15-16) and claim 6 (page 24, line 17 and lines 27-28);
- "terminals" and "a plurality or terminals" in each of claim 5 (page 22, line 29 and page 23, lines 14-15) and claim 8 (page 24, line 17 and lines 27-28);
- "a terminal information receiving unit" in claim 1 (page 21, line 6) and "a receiving unit" in claim 2 (page 21, line 26);
- "an unauthorized terminal determination unit" in claim 1 (page 21, line 18) and "an unregistered terminal ID determination unit" in claim 2 (page 21, line 28);
- "the digital content" and "a digital content" in claim 3 (page 22, lines 7-8 and line 18);

- "an unauthorized terminal determination unit" in claim 1 (page 21, line 18) and "the unauthorized terminal judgement unit" in claim 3 (page 22, line 16);
- "a terminal" in claim 1 (page 21, line 6) and "a terminal" in claim 3 (page 22, line 19);
- "a terminal ID" in each of claim 6 (page 23, line 27), claim 7 (page 24, lines 9 and 13), claim 8 (page 24, line 22), and claim 9 (page 25, line 2);

the same entity is meant or not.

1.4 The wording "a plurality of terminal" in claim 1 (page 21, lines 15-16) and claim 6 (page 23, line 32 - page 24, line 1) is unclear. Here, it is assumed that meant is "a plurality of terminals".

CLAIMS

1.   (Amended) A server that detects an unauthorized terminal from terminals, said server comprising:

5   a terminal information receiving unit operable to receive terminal information from each terminal, the terminal information including: one of unique information that is previously assigned to the terminal and authentication information that is defined based on the unique information; and additional identification

10   information that is additionally assigned to the terminal;

a terminal information holding unit operable to hold server terminal information including pieces of terminal information;

a terminal information search unit operable to search the server terminal information held in said terminal information

15   holding unit based on the received terminal information; and

an unauthorized terminal judgment unit operable to judge that the terminal is an unauthorized terminal in the case where the number of different pieces of additional identification information, which is detected correspondingly to identical one of the unique

20   information and the authentication information defined based on the unique information as a result of the search, is equal to or greater than a predetermined number.

2.   (Amended) The server according to Claim 1, further

25   comprising

a terminal verification unit operable to verify an authenticity of the terminal using received one of the unique information and the authentication information defined based on the unique information,

30   wherein the server terminal information includes: one of the unique information whose authenticity has been verified by said terminal verification unit; and the authentication information

21 26

defined based on the unique information.

3.   (Amended) The server according to Claim 1,

wherein additional identification information included in
5   terminal information received by said terminal information
receiving unit is information concerning a user who uses the
terminal.

4.   (Amended) The server according to Claim 1,
10   wherein the additional identification information is
information that an owner of the terminal inputs into the terminal.

5.   (Amended) The server according to Claim 1,

wherein the additional identification information is an IP
15   address of the terminal.

6.   (Amended) The server according to Claim 1, further
comprising:

a receiving unit operable to receive the additional
20   identification information from an operator of said server; and

an unregistered additional identification information
judgment unit operable to judge whether the received additional
identification information is registered in terminal information held
in said terminal information search unit,
25   wherein the terminal information search unit is further
operable to register the additional identification information in the
case where the authenticity of one of the unique information and
the authentication information is verified and said unregistered
additional identification information judgment unit judges that the
30   additional identification information is not registered.

7.   (Amended) The server according to Claim 1,

22

wherein, the terminal is permitted to access the digital content related to a predetermined package content at predetermined times by accessing said server via the network,

said server further comprising

5   a history holding unit operable to hold information indicating history of a digital content that is accessed by the terminal in a unit of each terminal specified by a pair of (i) one of the unique information and the authentication information and (ii) the additional identification information,

10   wherein said unauthorized terminal judgment unit is further operable to judge that the terminal is an unauthorized terminal in the case where a digital content that is accessed, exceeding the access limit, by a terminal that has an identical (i) one of the unique information and the authentication information and (ii) the

15   identical additional identification information.

8.   (Amended) The server according to Claim 7,

wherein one of the unique information and the authentication information is one of a secret key in a secret key

20   encryption method and a public key certificate in a public key encryption method.

9.   (Amended) A terminal connected to a server that detects an unauthorized terminal, said terminal comprising

25   a terminal information transmitting unit operable to transmit terminal information to the server, the terminal information including: one of unique information that is previously assigned to said terminal and authentication information that is defined based on the unique information; and additional

30   identification information that is additionally assigned to said terminal,

wherein the terminal information is used for searching

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server terminal information including pieces of terminal information held in the server, and

the terminal information is further used for judging that said terminal is an unauthorized terminal in the case where the number of different pieces of additional identification information, which is detected correspondingly to identical one of the unique information and the authentication information defined based on the unique information as a result of the search, is equal to or greater than a predetermined number.

10.　(New) An unauthorized terminal detection system comprising a server that detects an unauthorized terminal from terminals and a terminal connected to said server,

wherein said terminal includes

a terminal information transmitting unit operable to transmit terminal information to said server, the terminal information including: one of unique information that is previously assigned to said terminal and authentication information that is defined based on the unique information; and additional identification information that is additionally assigned to said terminal,

the server includes:

a terminal information receiving unit operable to receive terminal information from each terminal, the terminal information including: identical one of the unique information that is previously assigned to said terminal and the authentication information that is defined based on the unique information; and the additional identification information that is additionally assigned to said terminal;

a terminal information holding unit operable to hold server terminal information including pieces of terminal information;

a terminal information search unit operable to search the

24

server terminal information held by said terminal information holding unit based on the received terminal information; and

an unauthorized terminal judgment unit operable to judge that the terminal is an unauthorized terminal in the case where the

5   number of different pieces of additional identification information, which is detected correspondingly to identical one of the unique information and the authentication information defined based on the unique information as a result of the search, is equal to or greater than a predetermined number.

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11.   (New) An unauthorized terminal detection method for detecting an unauthorized terminal from terminals and a terminal connected to the server, said method comprising:

receiving terminal information from each terminal, the

15   terminal information including: one of unique information that is previously assigned to the terminal and authentication information that is defined based on the unique information; and additional identification information that is additionally assigned to said terminal;

20   searching server terminal information including pieces of terminal information held in said server based on the received terminal information; and

judging that a terminal is an unauthorized terminal in the case where the number of different pieces of additional

25   identification information, which is detected correspondingly to identical one of the unique information and the authentication information defined based on the unique information as a result of the search, is equal to or greater than a predetermined number.

30   12.   (New) The unauthorized terminal detection method according to Claim 11, further comprising:

verifying an authenticity of the terminal using received one

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of the unique information and the authentication information defined based on the unique information,

wherein the server terminal information includes one of: the unique information whose authenticity has been verified in said

5   verifying; and the authentication information defined based on the unique information.

13.   (New) A program for a server that detects an unauthorized terminal from terminals, said program causing a computer to

10   execute:

receiving terminal information from each terminal the terminal information including: one of the unique information that is previously assigned to the terminal and the authentication information that is defined based on the unique information; and

15   additional identification information that is additionally assigned to said terminal;

searching server terminal information including pieces of terminals information held in said server based on the received terminal information; and

20   judging that a terminal is an unauthorized terminal in the case where the number of different pieces of additional identification information, which is detected correspondingly to identical one of the unique information and the authentication information defined based on the unique information as a result of

25   the search, is equal to or greater than a predetermined number.

14.   (New) The program according to Claim 13, further comprising:

verifying an authenticity of the terminal using received one

30   of the unique information and the authentication information defined based on the unique information,

wherein, the server terminal information includes one of:

25/1

unique information whose authenticity has been verified in said verifying; and authentication information defined based on the unique information.

25/2

AMENDED SHEET (ARTICLE 19)